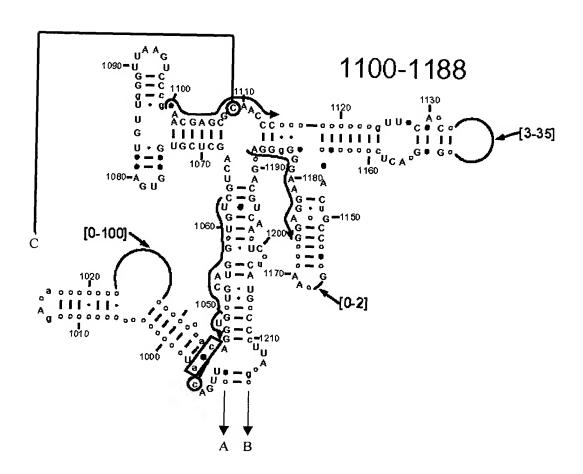
Atty Docket No.: IBIS0062-100 (DIBIS-0046US) Filing Date: Herewith Serial No.: Not Assigned

Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

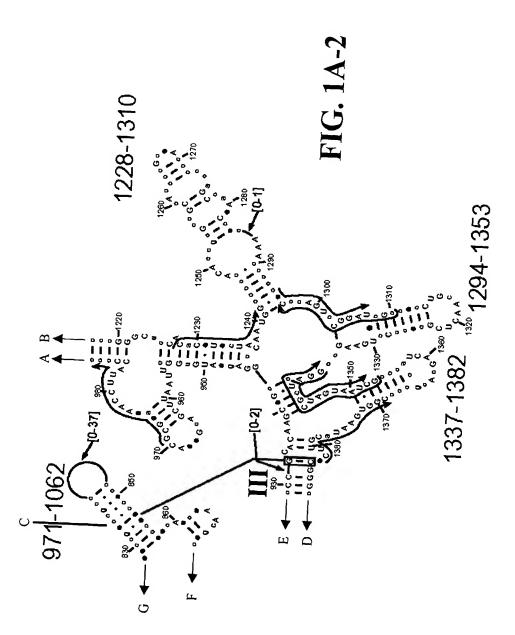
Inventors: David J. Ecker et al. Attorney: Paul K. Legaard

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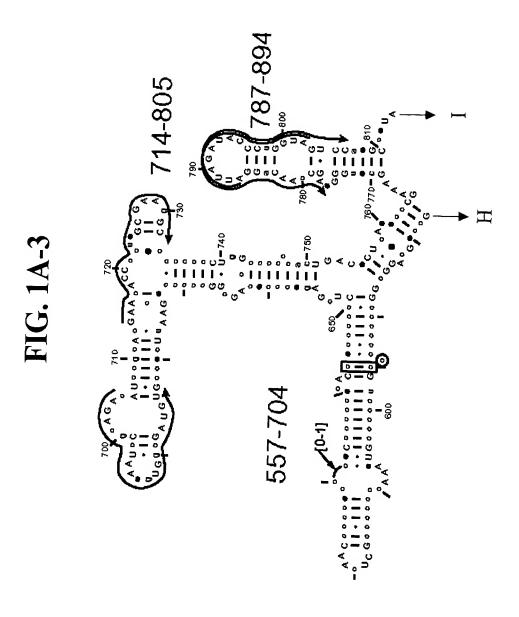
## **FIG. 1A-1**



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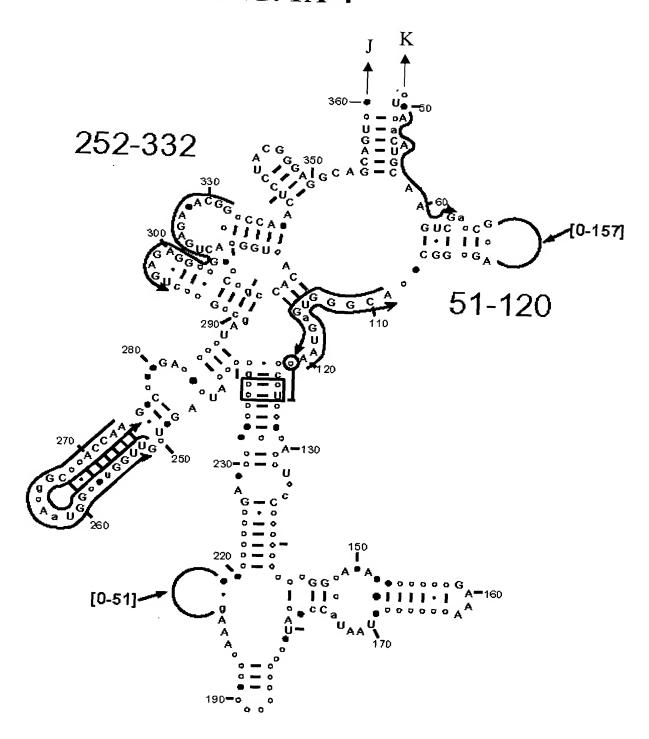


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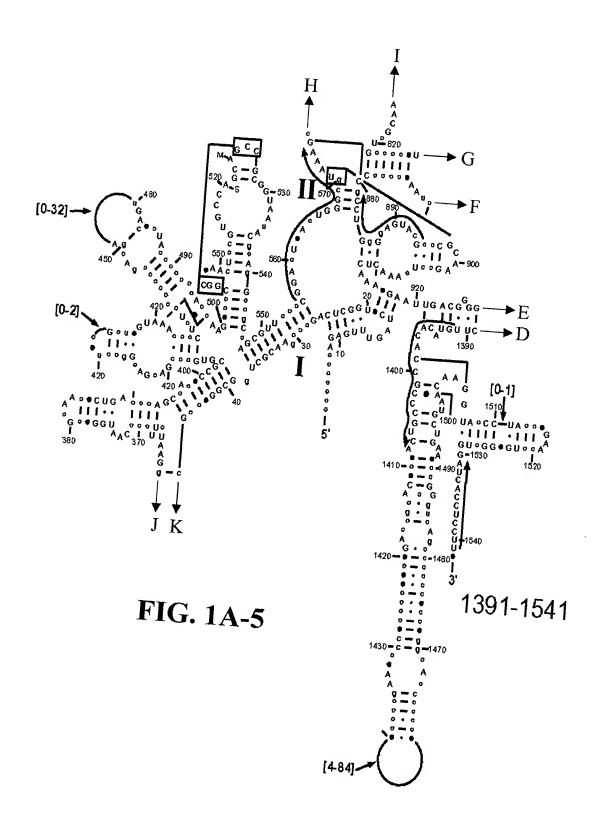
## FIG. 1A-4



Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

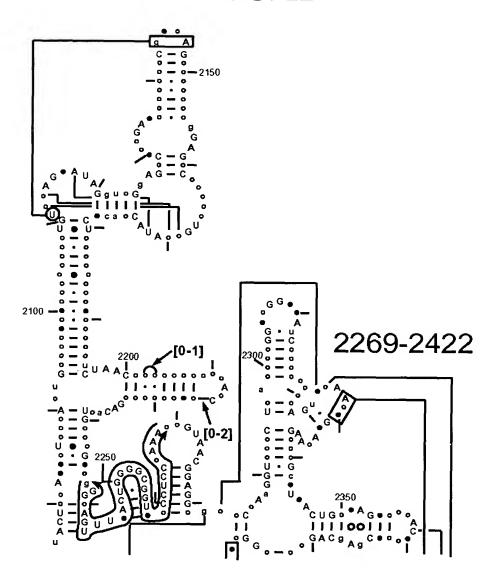
Inventors: David J. Ecker et al. Attorney: Paul K. Legaard

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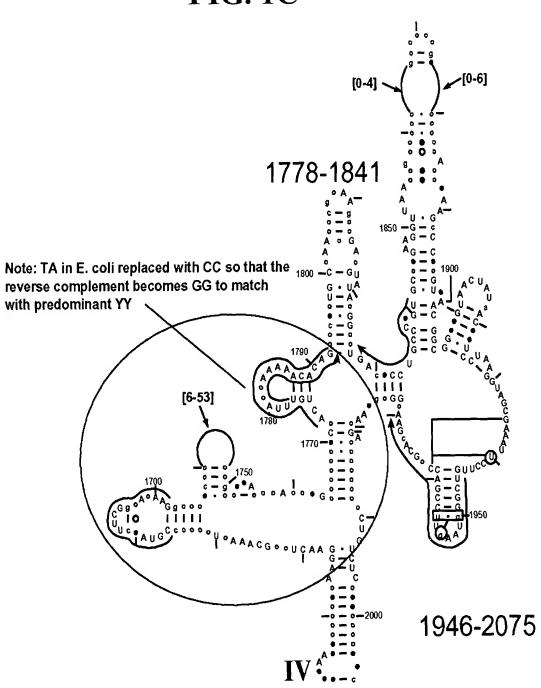
Atty Docket No.: IBIS0062-100 (DIBIS-0046US) Serial No.: Not Assigned Filing Date: Herewith Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Attorney: Paul K. Legaard Sheet 6 of 32 Inventors: David J. Ecker et al.

## FIG. 1B



Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Inventors: David J. Ecker et al. Attorney: Paul K. Legaard Sheet 7 of 32

## FIG. 1C

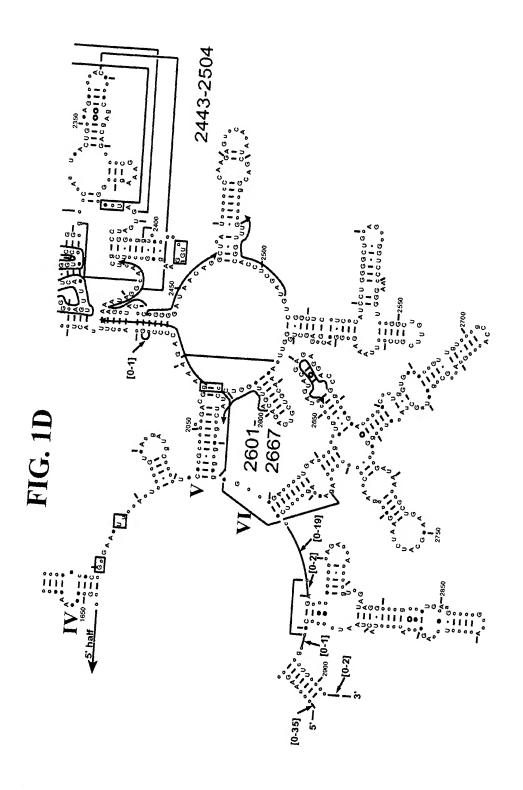


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Attorney: Paul K. Legaard
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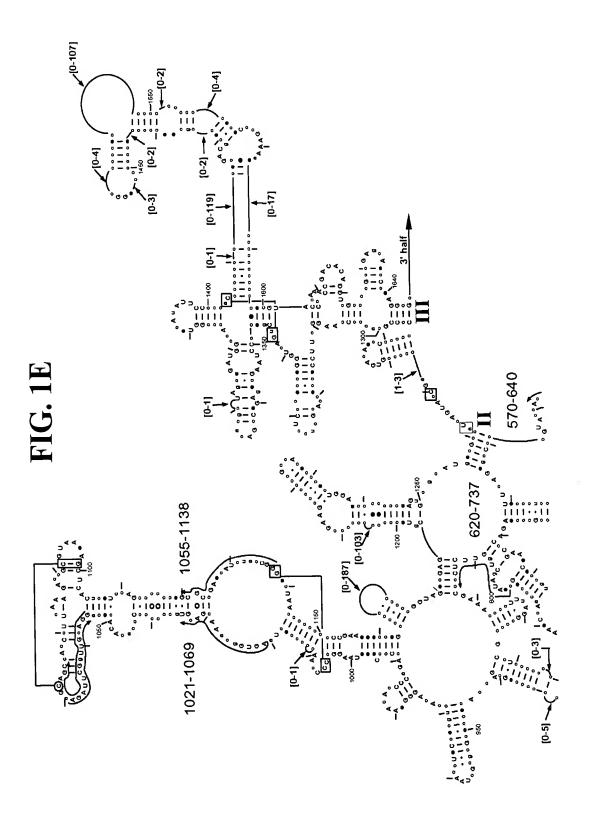


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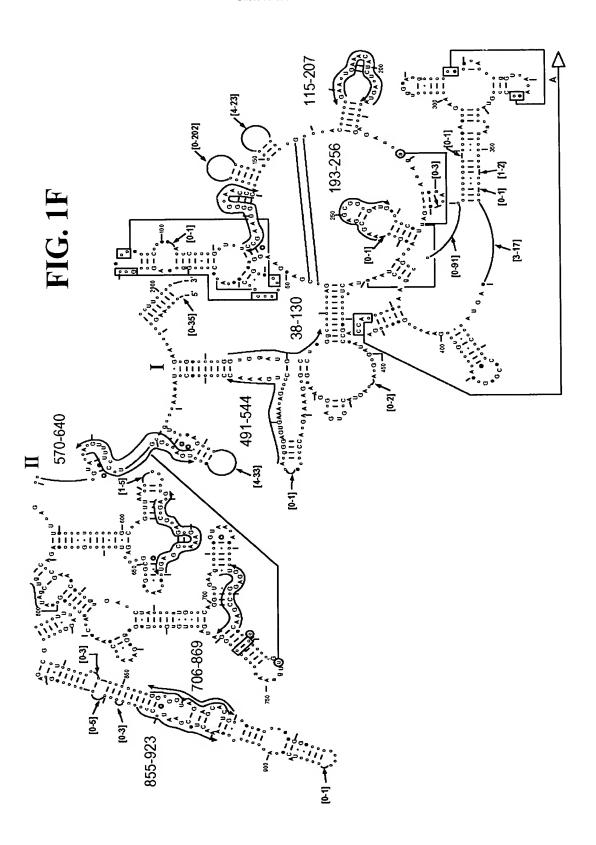
Serial No.: Not Assigned Filing Date: Herewith

Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND
CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY
Inventors: David J. Ecker et al.

Short 9 of 32 Attorney: Paul K. Legaard Sheet 9 of 32

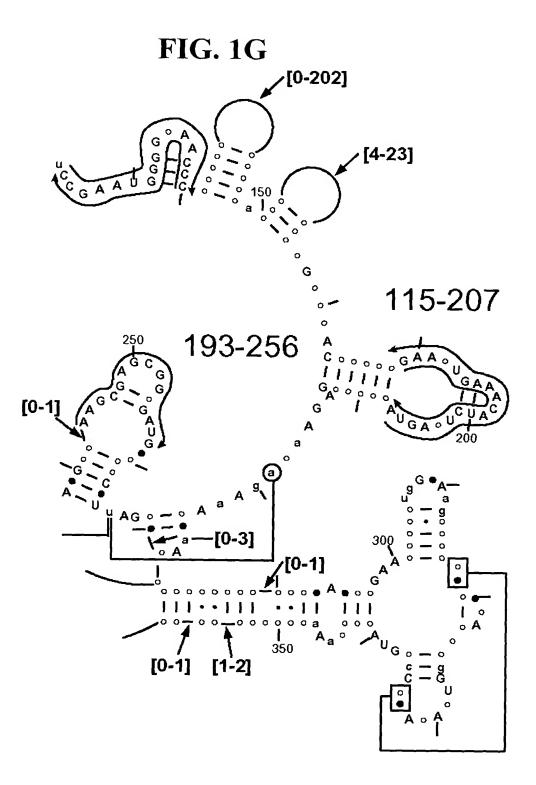


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Inventors: David J. Ecker et al. Attorney: Paul K. Legaard
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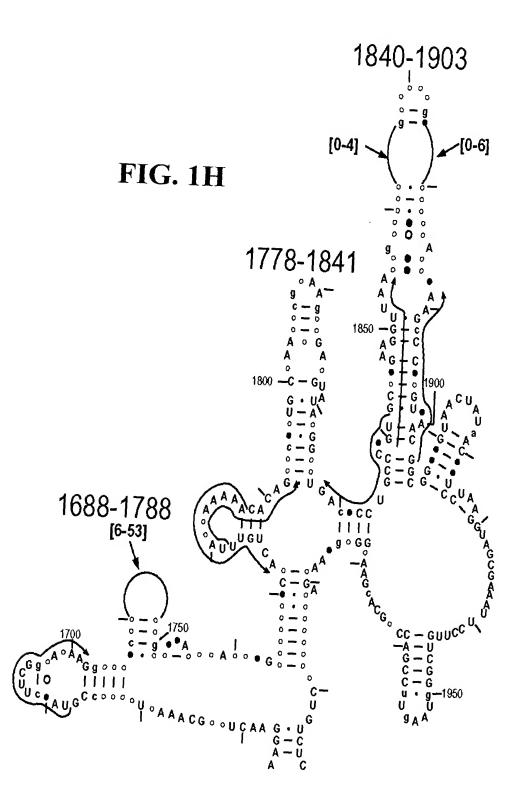


Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND

Attorney: Paul K, Legaard Sheet 11 of 32 CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Inventors: David J. Ecker et al.



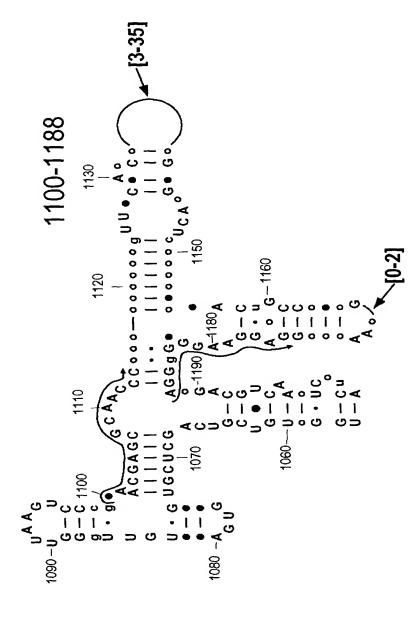
Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Inventors: David J. Ecker et al. Attorney: Paul K. Legaard



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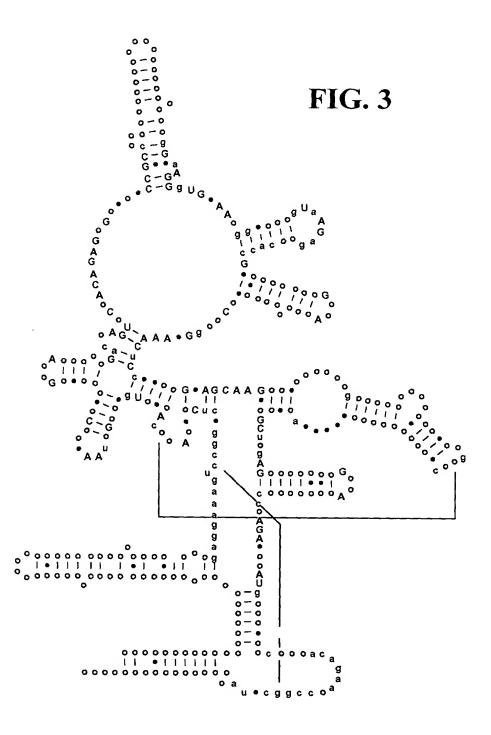
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Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

Attorney: Paul K. Legaard Inventors: David J. Ecker et al.

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\* TACGTACGT (Watson) TAČGTAČGT (Watson) ATGCATGCA (Crick) ATGČATGČA (Crick) FIG. 4 \*ACG\*ACG\* ~ TAČGTAČGT ' ATGCATGCA mass (C\*-C)=y mass (T\*-T)=x \* tag \* tag

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CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

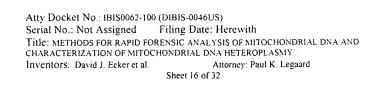
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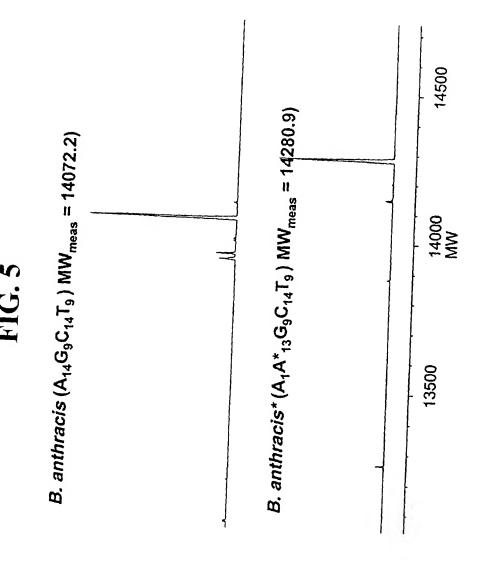
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Attorney: Paul K. Legaard

Serial No.: Not Assigned

Inventors: David J. Ecker et al.



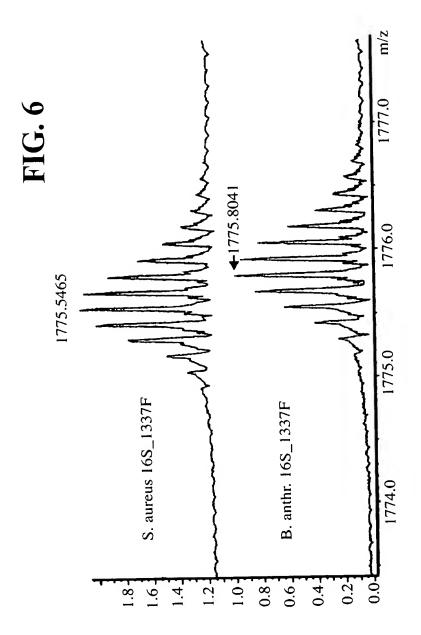


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Serial No.: Not Assigned Filing Date: Herewith

Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

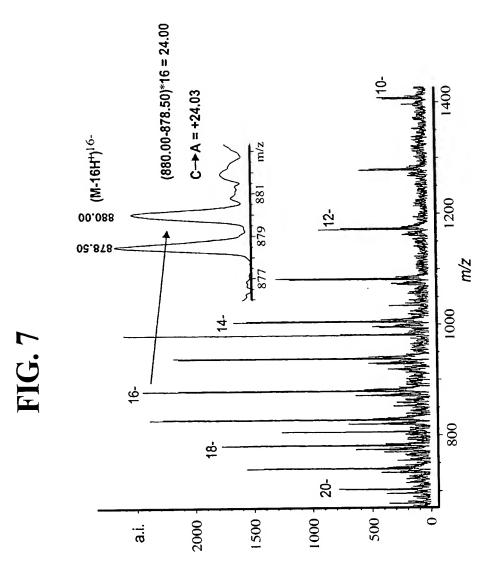
Attorney: Paul K. Legaard Sheet 17 of 32 Inventors: David J. Ecker et al.



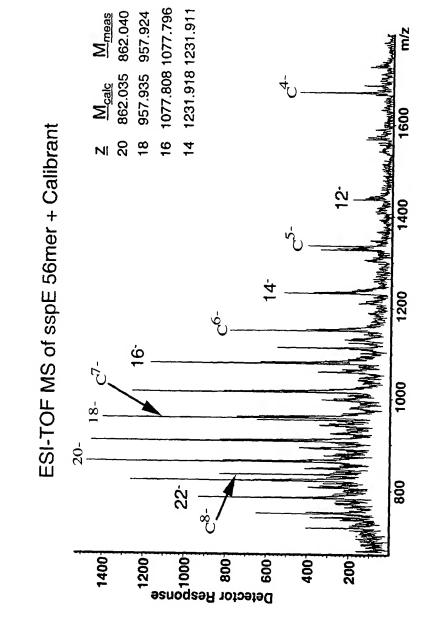
Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

Attorney: Paul K. Legaard Sheet 18 of 32 Inventors: David J. Ecker et al.



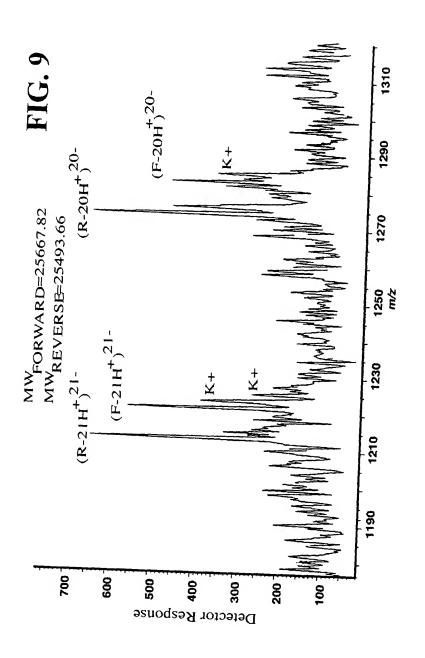


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Inventors: David J. Ecker et al. Attorney: Paul K. Legaard
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Serial No.: Not Assigned Filing Date: Herewith

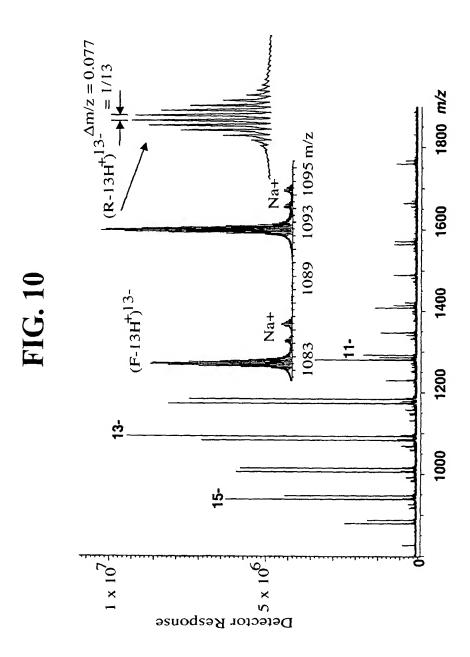
Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Attorney: Paul K. Legaard Sheet 20 of 32 Inventors: David J. Ecker et al.



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Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Inventors: David J. Ecker et al.

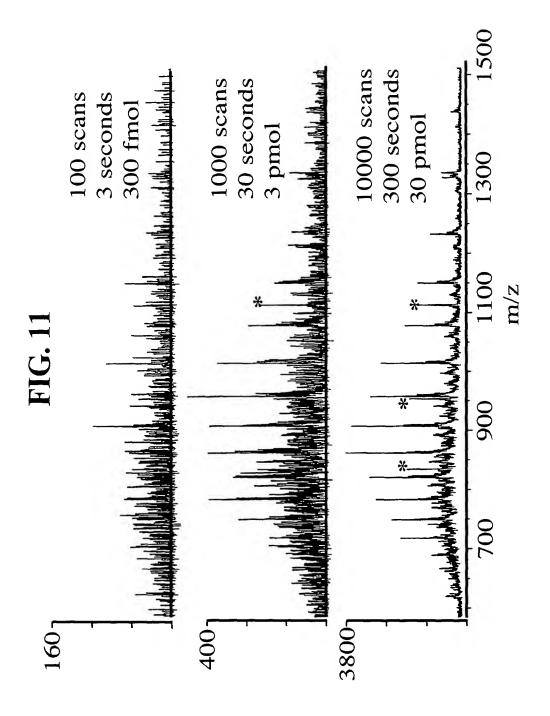
Attorney: Paul K. Legaard Sheet 21 of 32



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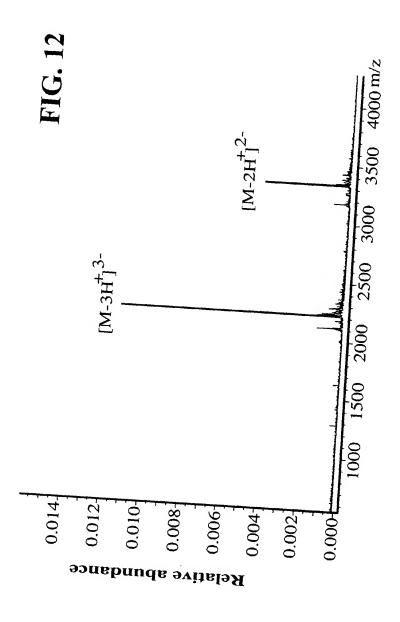


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Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

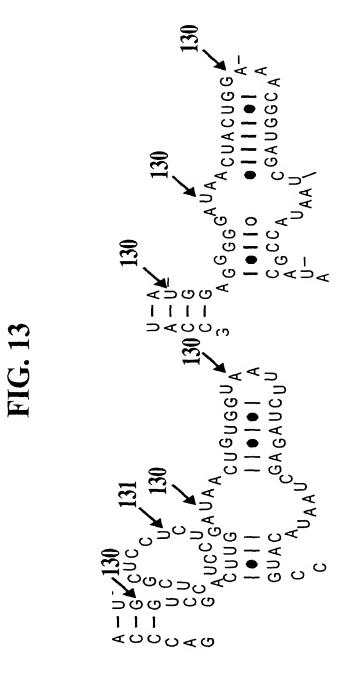
Inventors: David J. Ecker et al. Attorney: Paul K. Legaard

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CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Attorney: Paul K. Legaard Sheet 24 of 32 Inventors: David J. Ecker et al.

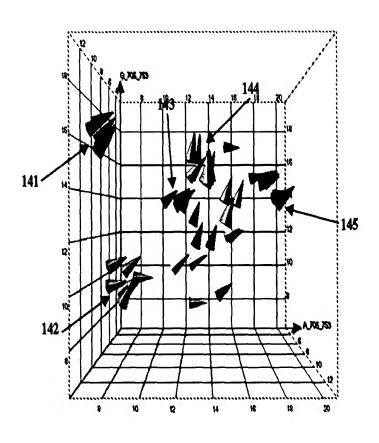


Atty Docket No.: 18150002-100 (2012)
Serial No.: Not Assigned Filing Date: Herewith
Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND
CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY
Inventors: David J. Ecker et al.

Attorney: Paul K. Legaard

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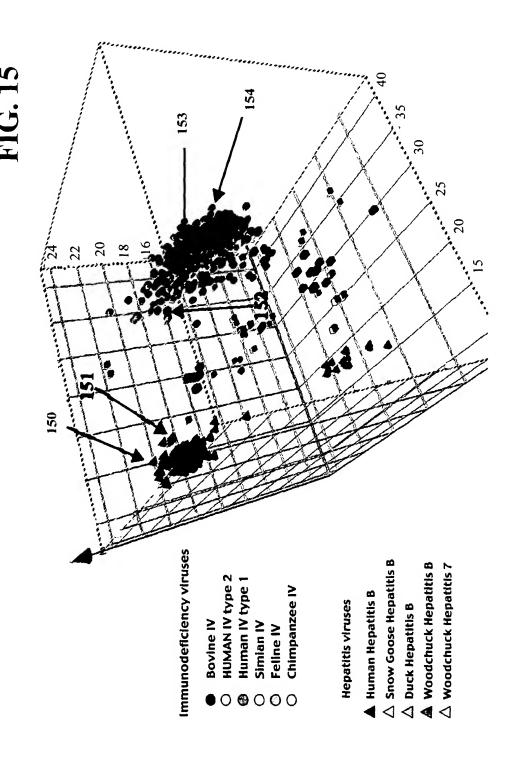
**FIG. 14** 





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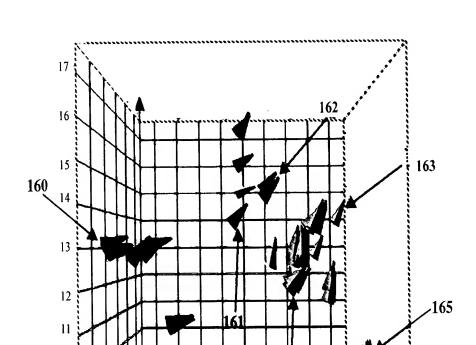
Attorney: Paul K. Legaard Sheet 26 of 32 Inventors: David J. Ecker et al.

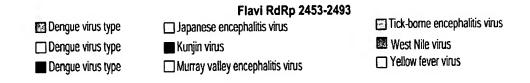


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**FIG. 16** 





11

12

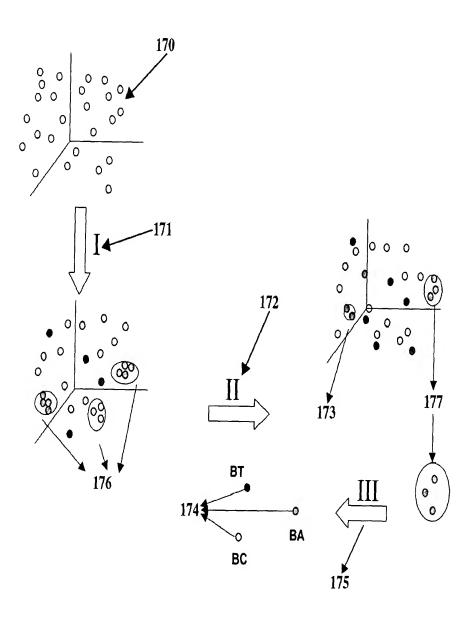
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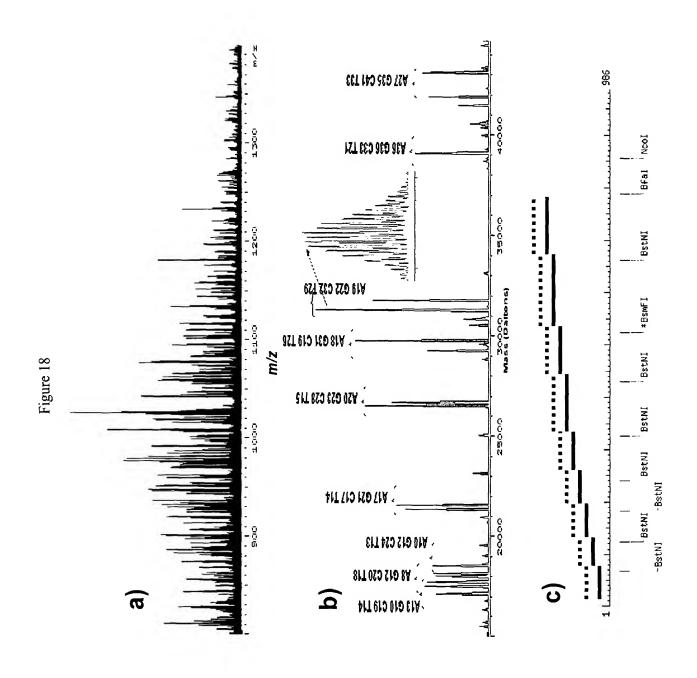
Atty Docket No.: IBIS0062-100 (DIBIS-0046US) Serial No.: Not Assigned Filing Date: Herewith
Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND
CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

Inventors: David J. Ecker et al. Attorney: Paul K. Legaard

FIG. 17



Atty Docket No.: IBIS0062-100 (DIBIS-0046US)
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CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY
Attorney: Paul K. Legaard
Inventors: David J. Ecker et al.
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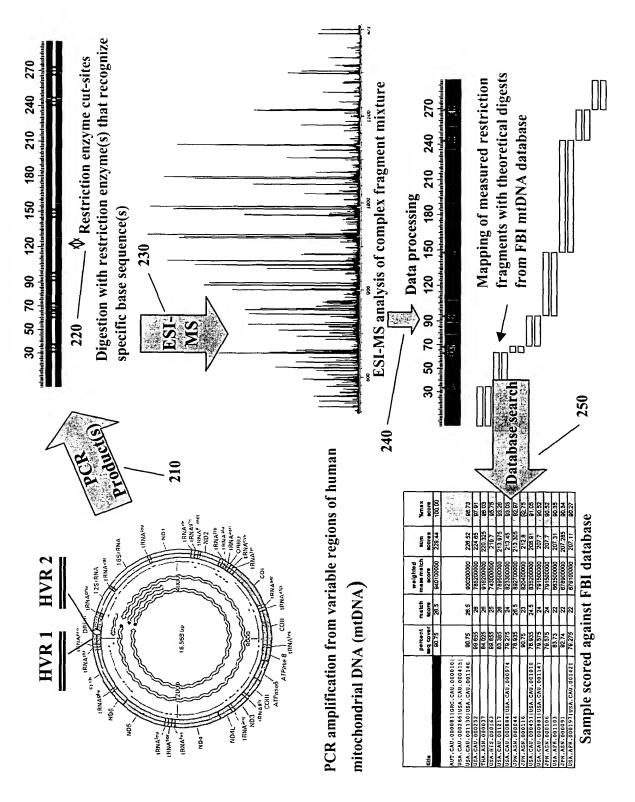


Figure 19

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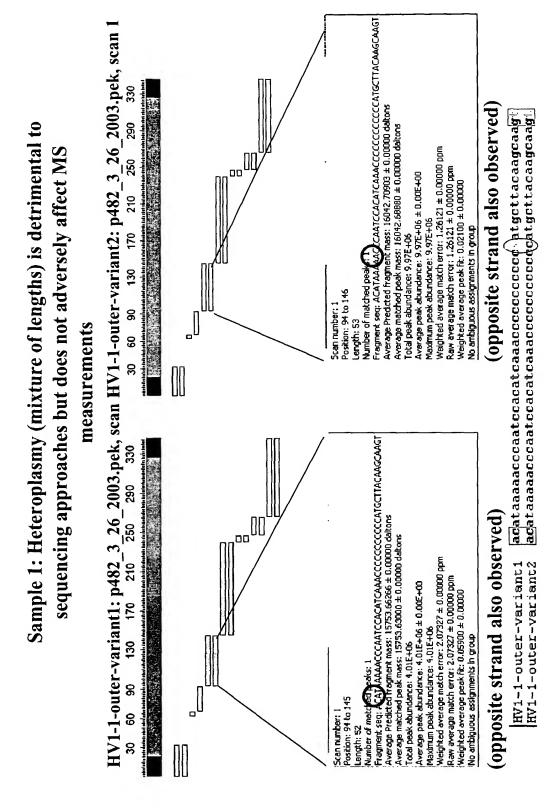
CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY

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Inventors: David J. Ecker et al.

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Heteroplasmic region

Figure 20A

Title: METHODS FOR RAPID FORENSIC ANALYSIS OF MITOCHONDRIAL DNA AND CHARACTERIZATION OF MITOCHONDRIAL DNA HETEROPLASMY Inventors: David J. Ecker et al. Attorney: Paul K. Legaard

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Figure 20B

Sequences differ in length by one base in the 'C' stretch. Both variants appear in digest data. Sequencing profile also points to a length variation in this region: Example trace: 040803\_81\_A1\_HV1-1\_1560F\_A11.AB1

